City of Monroe

Critical Areas and Buffers

STREAMS

- Type 1
- Type 3
- Type 3u*
- Type 4
- Type 5
- Unclassifed Stream
- (#) Stream Inventory No.

*Unless determined an artifical waterway

WETLANDS

- Cat I
- Cat II
- Cat III
- Cat IV
- Unclassified Wetlands
- (#) Wetland Inventory No.

STEEP SLOPES

- 40% or > slope

BOUNDARIES

- Urban Growth Area
- Monroe City Limits
- Shoreline Boundary

BUFFERS*

- Combined Critcal Areas Buffers

* Type 4 stream buffer shown as 150 ft on each side of the channel., Type 4 streams, beyond a quarter mile of a stream with salmonids, have a buffer of 75 ft on each side of the channel. See MMC 20.05 for specific buffers.

Notes:

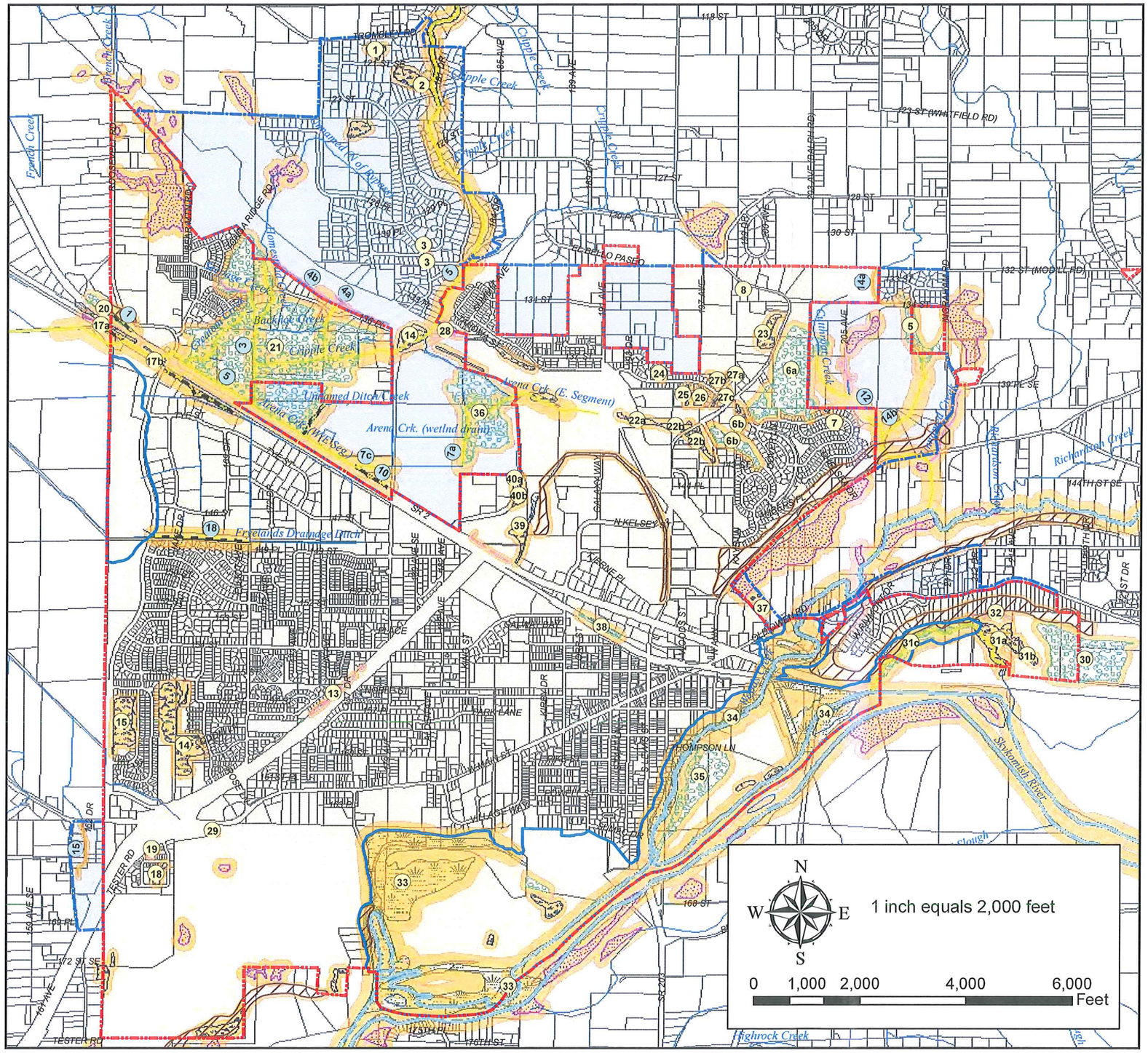
1) The locations decpicted are approximate boundaries for critical areas within the city limits. This maps provides only approximate boundaries of known features and is not a substitute for more detailed maps and/or studies to identify the exact locations of known features or additional critical area features not illustrated on the map.
2) The points where streams change classification are approximate and subject to confirmation and refinement.
3) Classifications are subject to refinement based upon on additional or updated fish use and seasonality of water flow information.



Map data shown is the property of the sources listed below. Inaccuracies may exist, and the City of Monroe implies no warranties or guarantees regarding any aspect of data depiction. This map is not an actual survey of individually noted critical areas. Streams have been categorized using the water typing system defined in Monroe Municipal Code Chapter 20.05 (equivalent to WAC 222-16-031). Wetlands were classified using the Washington Department of Ecology's Washington State Wetland Rating system for Western Washington. Wetland size, shape and location are approximate based on a reconnaissance level evaluation. The City of Monroe and the Urban Growth Area may contain additional critical areas not identified on this map. Therefore this map is to be used for reference purposes only.

Source: City of Monroe GIS, 2008;
The Watershed Company;
Snohomish County GIS, 2007

Project: Monroe Critical Area Buffers 11x17
Location: Y:\GIS\Departments\CD\Critical Areas\Monroe critical area buffer 2008 (12-04-08) 11x17.mxd
Revised: 12-04-08
Author: R. Wright



RIVERINE

DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): Wetland 33
Person(s) Rating Wetland: Kathy Curry/Amy Myers Affiliation: The Watershed Company
Date of site visit: not visited, previous Shoreline Inventory and aerial photograph reviewed

DRAFT SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I X II___ III___ IV___

Category I = Score >70
Category II = Score 51-69
Category III = Score 30-50
Category IV = Score < 30

Score for Water Quality Functions	24
Score for Hydrologic Functions	26
Score for Habitat Functions	24
TOTAL score for functions	74

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply X

Final Category (choose the "highest" category from above) **I**

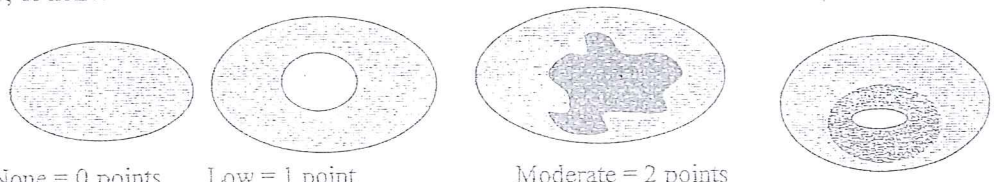
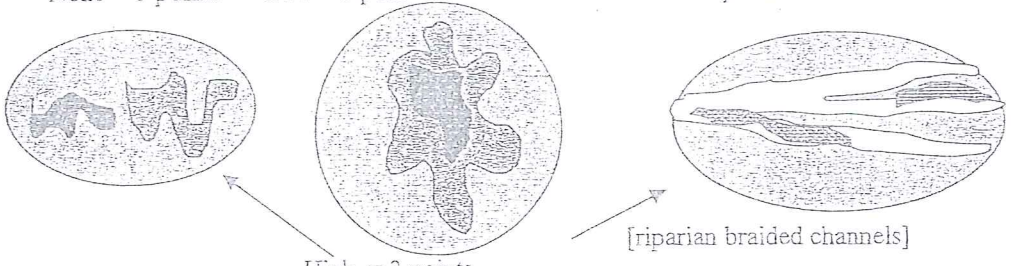
Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
Estuarine		Depressional	
Natural Heritage Wetland		Riverine	X
Bog		Lake-fringe	
Mature Forest		Slope	
Old Growth Forest		Flats	
Coastal Lagoon		Freshwater Tidal	
Interdunal			
None of the above	X		

R	Riverine and Freshwater Tidal Fringe Wetlands		Points
	WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality		
R	R 1. Does the wetland have the potential to improve water quality? *(see p. 49)*		
R	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event:		4
	Depressions cover >3/4 area of wetland	points = 8	
	Depressions cover > 1/2 area of wetland	points = 4	
	Depressions present but cover < 1/2 area of wetland	points = 2	
	No depressions present	points = 0	

R	R 1.2 Characteristics of the vegetation in the wetland: Forest or shrub > 2/3 the area of the wetland — points = 8 Forest or shrub > 1/3 area of the wetland — points = 6 Ungrazed, emergent plants > 2/3 area of wetland — points = 6 Ungrazed emergent plants > 1/3 area of wetland — points = 3 Forest, shrub, and ungrazed emergent < 1/3 area of wetland — points = 0	8
R	*Add the points in the boxes above*	12
R	R 2. Does the wetland have the opportunity to improve water quality? *(see p. 50)* Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants.* ____Grazing in the wetland or within 150 ft ____Untreated stormwater discharges to wetland ____Tilled fields or orchards within 150 ft of wetland ____A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging ____Residential, urban areas, golf courses are within 150 ft of wetland __X__The river or stream linked to the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds or nutrients in the river water above standards for water quality ____Other_____ YES multiply score in R 1. by 2 NO multiply score in R 1. by 1	multiplier 2
R	TOTAL - Water Quality Functions Multiply the score from R 1 by R 2 *Add score to table on p. 1*	24
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion	Points
	R 3. Does the wetland have the potential to reduce flooding and erosion? *(see p. 51)*	
R	R 3.1 Characteristics of the overbank storage the wetland provides: *Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (width of wetland)/(width of stream).* If the ratio is more than 20 — points = 9 If the ratio is between 10 – 20 — points = 6 (assumed) If the ratio is 5- <10 — points = 4 If the ratio is 1- <5 — points = 2 If the ratio is < 1 — points = 1	6
R	R 3.2 Characteristics of vegetation that slow down water velocities during floods: *Treat large woody debris as "forest or shrub". Choose the points appropriate for the best description.* Forest or shrub for >1/3 area OR Emergent plants > 2/3 area — points = 7 Forest or shrub for > 1/10 area OR Emergent plants > 1/3 area — points = 4 Vegetation does not meet above criteria — points = 0	7
R	*Add the points in the boxes above*	13
R	R 4. Does the wetland have the opportunity to reduce flooding and erosion? *(see p. 54)* Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. *Note which of the following conditions apply.* ____There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. __X__There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding ____Other_____ *(Answer NO if the major source of water to the wetland is controlled by a reservoir or the wetland is tidal fringe along the sides of a dike)* YES multiply score in R 3 by 2 NO multiply score in R 3 by 1	multiplier 2

R	TOTAL - Hydrologic Functions Multiply the score from R 3 by R 4 *Add score to table on p. 1*	26

HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat	Points
H 1. Does the wetland have the potential to provide habitat for many species?	
H 1.1 Vegetation structure *(see p. 68)* *Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.* ____ Aquatic bed __X__ Emergent plants __X__ Scrub/shrub (areas where shrubs have >30% cover) __X__ Forested (areas where trees have >30% cover) __X__ Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) *Add the number of vegetation types that qualify. If you have:* 4 types or more points = 4 3 types points = 2 2 types points = 1 1 type points = 0	4
H 1.2. Hydroperiods *(see p. 69)* *Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (see text for descriptions of hydroperiods)* __X__ Permanently flooded or inundated 4 or more types present points = 3 __X__ Seasonally flooded or inundated 3 types present points = 2 __X__ Occasionally flooded or inundated 2 types present point = 1 __X__ Saturated only __X__ Permanently flowing stream or river in, or adjacent to, the wetland __X__ Seasonally flowing stream in, or adjacent to, the wetland ____ *Lake-fringe wetland* = 2 points ____ *Freshwater tidal wetland* = 2 points	3
H 1.3. Richness of Plant Species *(see p. 71)* Count the number of plant species in the wetland that cover at least 10 ft^2. (*different patches of the same species can be combined to meet the size threshold)* *You do not have to name the species.* *Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle* If you counted: > 19 species points = 2 *List species below if you want to:* 5 - 19 species points = 1 < 5 species points = 0	1
H 1.4. Interspersion of habitats *(see p. 72)* Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.  None = 0 points Low = 1 point Moderate = 2 points  [riparian braided channels] High = 3 points NOTE: If you have four or more vegetation types or three vegetation types and open water the rating is always "high".	3

H 1.5. Special Habitat Features: *(see p. 73)*

Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.

_X_ Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long).

_X_ Standing snags (diameter at the bottom > 4 inches) in the wetland

_X_ Undercut banks are present for at least 6.6 ft (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream for at least 33 ft (10m)

_X_ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present

_X_ At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)*

____ Invasive plants cover less than 25% of the wetland area in each stratum of plants

5

H 1. TOTAL Score - potential for providing habitat
Add the scores in the column above

16

H 2. Does the wetland have the opportunity to provide habitat for many species?

H 2.1 Buffers *(see p. 75)*

Choose the description that best represents condition of buffer of wetland. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."

____ 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No developed areas within undisturbed part of buffer. (relatively undisturbed also means no-grazing) Points = 5

____ 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. Points = 4

____ 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. Points = 4

____ 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference, . Points = 3

____ 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. Points = 3

If buffer does not meet any of the three criteria above

____ No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. Points = 2

____ No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. Points = 2

____ Heavy grazing in buffer. Points = 1

____ Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland Points = 0

_X_ Buffer does not meet any of the criteria above. Points = 1

1

H 2.2 Corridors and Connections *(see p. 76)*

H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (*dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor*).

YES = 4 points *(go to H 2.3)* NO = go to H 2.2.2

H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above?

YES = 2 points *(go to H 2.3)* NO = H 2.2.3

H 2.2.3 Is the wetland:

within 5 mi (8km) of a brackish or salt water estuary OR
within 3 mi of a large field or pasture (>40 acres) OR
within 1 mi of a lake greater than 20 acres?

YES = 1 point NO = 0 points

1

H 2.3 Near or adjacent to other priority habitats listed by WDFW *(see p. 77)* Which of the following priority habitats are within 330ft (100m) of the wetland? *(see text for a more detailed description of these priority habitats)* __X__ Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. ____ Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres). ____ Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft. ____ Old-growth forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. ____ Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. ____ Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where grasses and/or forbs form the natural climax plant community. ____ Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. ____ Caves: A naturally occurring cavity, recess, void, or system of interconnected passages ____ Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%. __X__ Urban Natural Open Space: A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other *priority habitats*, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development. ____ Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. The salinity may be periodically increased above that of the open ocean by evaporation. Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine habitat extends upstream and landward to where ocean-derived salts measure less than 0.5% during the period of average annual low flow. Includes both estuaries and lagoons. ____ Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of beaches, and may also include the backshore and adjacent components of the terrestrial landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log recruitment, nutrient contribution, erosion control). If wetland has 3 or more priority habitats = 4 points If wetland has 2 priority habitats = 3 points If wetland has 1 priority habitat = 1 point No habitats = 0 points	3
H 2.4 Wetland Landscape *(choose the one description of the landscape around the wetland that best fits) (see p. 79)* There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 5 There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3 The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile points = 3 There is at least 1 wetland within ½ mile. points = 2 There are no wetlands within ½ mile. points = 0	3
H 2. TOTAL Score - opportunity for providing habitat *Add the scores in the column above*	8
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	24